

ADVANCES IN IBD

Current Developments in the Treatment of Inflammatory Bowel Diseases

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Vaccinations and the Utilization of Immunosuppressive IBD Therapy

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G&H Could you describe the mechanisms by which the use of immunosuppressive agents imparts an increased risk of infection in inflammatory bowel disease (IBD) patients?

GM IBD involves a dysregulation of the immune system, which is activated inappropriately. Immunosuppressive medications like azathioprine and anti-tumor necrosis factors (TNF) are utilized to suppress or modify the immune response and limit the abnormal inflammatory process. However, because the immune system is important for fighting infections, these medications potentially increase susceptibility to and risk from various bacterial, viral, and/or fungal infections.

G&H Could you describe your own research and findings regarding the prevalence of proper vaccination in immunosuppressed IBD patients?

GM Our group conducted a survey among our IBD patients to determine whether they had factors present that placed them at increased risk for certain vaccine-preventable illnesses and whether they had actually received appropriate immunizations. We looked at five specific vaccines: influenza, pneumococcal vaccine, varicella (chicken pox) vaccine, hepatitis B, and tetanus. We found that, based on their utilization of immunosuppressive medication and other risk factors, patients were at increased risk for all of these infections but only a minority had been appropriately immunized.

The two vaccines that are most applicable to adults with IBD are the flu shot and the pneumococcal vaccine. The Centers for Disease Control has identified high-risk individuals for these infections to include those who are immunosuppressed or treated with medications that suppress the immune system. While the IBD disease state itself probably does not increase infection risk, the unpredictable course of IBD portends a high likelihood for immunosuppression; even if a patient is not currently taking an immunosuppressive medication, they may be on these medications in the future. In our survey, 86% of the patients had been on some form of immunosuppressive therapy at some point in the course of their disease. However, only 28% of the respondents regularly received the flu shot and only 9% reported vaccination against pneumococcal infection. We concluded that our patients generally are at risk but that they are not appropriately immunized.

G&H Were you able to determine specific causes for the lack of proper immunization?

GM Of all the vaccinations considered, the flu shot enjoys the greatest public awareness, so we focused our questioning on this immunization. The most common reason our patients did not receive regular flu shots (reported by over half of those at risk but not immunized) was that they were not aware that it was indicated.

This finding begs the further question of why they were not aware. As gastroenterologists, we are prescribing

medications that potentially put patients at risk. Is it our responsibility to inform them of the need for immunization? Or is it the responsibility of the primary care physician (PCP), who generally manages healthcare maintenance issues like immunizations? Of the respondents in our survey, 80% of patients had visited their PCP within the last year. Although the designation of responsibility may be unclear, the bottom line is that over half of our patients were not aware that flu vaccination was indicated for their condition.

G&H Are these same disparities reflected in other high-risk groups requiring flu vaccination?

GM There are public health efforts geared toward educating and immunizing some high-risk groups like the elderly. In more analogous groups of patients, such as those with rheumatoid arthritis, who take similar immunosuppressive therapies, there have been similar findings published regarding discrepancy in terms of patients at risk versus those who actually get vaccinated. Conversely, in transplant patients, who receive immunosuppression to avoid organ rejection, there are successfully implemented guidelines to provide appropriate vaccinations before the transplant procedure. The IBD community could learn to adopt similar tactics and consider vaccinations early on in the disease course, before patients are put on immunosuppressive medications.

G&H Is there a perception among community gastroenterologists and PCPs that vaccination may be dangerous in immunosuppressed patients and should not be administered?

GM Although we have no specific data, I do believe that there is a reluctance on the part of some physicians who may not be familiar with the use of potent immunosuppression and indications for immunizations, particularly as some vaccines (ie, live-virus vaccines) are generally contraindicated in these patients. Further education and guidelines could help in this regard.

G&H What evidence exists regarding lack of response to vaccination in patients taking an immunosuppressant?

GM There are several studies in both the organ transplant and rheumatology literature demonstrating that patients who are on medications that suppress the immune system at the time of vaccination do not necessarily respond as well to the vaccine. In the IBD literature, there are only a few studies that have considered the same question. One

publication examined the flu vaccine in 51 children with IBD and 29 healthy controls. The authors found that the IBD patients responded less robustly to one of three components of the flu shot and that those patients on combination immunosuppressive medications responded less well to two out of three components.

Another study recently looked at whether newly initiated therapy with 6-mercaptopurine (6MP) impaired response to pneumococcal and other vaccines. They found that 6MP alone did not make a difference. We recently looked at response to pneumococcal vaccination in 3 groups. The first was made up of patients with IBD who were on two immunosuppressants, an anti-TNF, and an immunomodulator. The second group contained IBD patients not on any immunosuppressive therapy. We also had a group of healthy controls. We found that those with IBD who were not on immunosuppressive medications responded similarly to the healthy controls. However, the patients who were on combination immunosuppressive therapy had a significantly less robust response to vaccination.

I do not think we have enough data yet to definitively decide whether impaired response is due to a particular medication, duration of therapy, or particular combinations of drugs. However, it does seem that patients who are on multiple immunosuppressives have a diminished response to vaccines.

G&H What future procedures should be utilized to ensure that more IBD patients are fully immunized against infection?

GM We need to recognize that although our patients may not be on immunosuppressives currently, they may need them in the future. Because they respond less robustly when they are taking these medications, we should take the opportunity to vaccinate them at the time of diagnosis. We generally spend more time with a patient at the initial diagnostic visit. I have made it a part of my practice to take part of this time to discuss vaccine risk and vaccine history and educate and vaccinate patients when I first see them. This approach has also been advocated by a European group and will likely be included in future guidelines.

Finally, it is important to remember the human papilloma virus (HPV) vaccine. This relatively new vaccination is not included in many guidelines, but we know that women with IBD do have a higher risk for HPV and abnormal pap smears, which lead to cervical cancer. Physicians who treat adults may not consider the HPV vaccine because it is generally given in the pediatric population, but I believe it should be considered in adult women on immunosuppressive medication as well.

Suggested Reading

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